



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
| 10/567,585 | 09/15/2006 | Dennis Hill | 7744P003 | 2540 |

8791 7590 01/13/2009
BLAKELY SOKOLOFF TAYLOR & ZAFMAN LLP
1279 OAKMEAD PARKWAY
SUNNYVALE, CA 94085-4040

| |
|----------|
| EXAMINER |
|----------|

OREILLY, PATRICK F

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
|----------|--------------|

3749

| | |
|-----------|---------------|
| MAIL DATE | DELIVERY MODE |
|-----------|---------------|

01/13/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--|-------------------------------------|--|
| Office Action Summary | Application No. 10/567,585 | Applicant(s) HILL, DENNIS | |
| | Examiner Patrick F. O'Reilly III | Art Unit 3749 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2008 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input checked="" type="checkbox"/> Other: <u>See Continuation Sheet</u> |

Continuation of Attachment(s) 6). Other: Appendices A and B (Figures 1 and 2 of this application with examiner's suggested drawing changes).

DETAILED ACTION

1. This action is in response to applicant's Request for Continued Examination (RCE) received on October 27, 2008.

Drawings

2. The amendment to the drawings filed April 16, 2008 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: the *specific location* of the "temperature sensor 30", the "fan 31", and the "heater 32" as depicted in amended Figures 1 and 2. The originally filed specification does not describe the *specific location* of these components as depicted in amended Figures 1 and 2. In particular, with respect to the "temperature sensor 30" and the "heater 32", the original disclosure merely provides that these two components are "positioned inside the cabinet" (see e.g., page 4 of the specification, lines 7-8 and 29-30). Moreover, with respect to "fan 31", while the original disclosure provides that the fan can be provided "under vent 5" (see e.g., page 4, lines 22-23), it does not specify the specific location of the "fan 31" under "vent 5" as newly depicted in amended Figures 1 and 2.

In his Remarks, dated October 27, 2008, the applicant states that he is uncertain how the "temperature sensor 30", the "fan 31", and the "heater 32" could be added to the drawings without placing them in specific locations. For the applicant's convenience, the examiner has included annotated sketches of Figures 1 and 2 that demonstrate the manner in which these claimed elements could be added to the drawings without putting them in specific locations. Refer to attached Appendices A and B. In the reply to this Office Action, the applicant is

Art Unit: 3749

required either to amend the drawings as suggested in the attached appendices or to cancel the new matter added in the drawings filed on April 16, 2008.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3749

5. **Claims 1-3 and 6-12** are rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application Publication No. GB 2 262 190 A (“GB ‘190”) in view of Irmer (US 2003/0011988 A1). These two references, when considered together, teach all of the elements recited in **claims 1-3 and 6-12** of this application, except for certain matters of obvious design choice as described below (claims 3 and 6).

6. In particular, claim 1 of this application is obvious when the GB ‘190 reference is viewed in light of Irmer. The GB ‘190 reference discloses the invention substantially as claimed, including: a housing (4, 14) configured to fit at least partially over the ceiling (top wall of inner casing 6) of an equipment cabinet (electrical apparatus enclosure 2) including fitting over at least one vent (outlet opening 20) in the ceiling (top wall of inner casing 6) of the cabinet (2), so that at least a majority of the interior (peripheral airflow chamber defined between the top wall of inner casing 6 and the baffle wall 14, as well as between the sidewalls of outer casing 4 and the sidewalls of inner casing 6) of the housing (4, 14) is in permanent communication with the interior (equipment airflow chamber circumscribed by inner casing 6) of the cabinet (2) so that air can always flow between the interior (peripheral airflow chamber) of the housing (4, 14) and the interior (equipment airflow chamber circumscribed by inner casing 6) of the cabinet (2) through the vents (20) in the ceiling (top wall of inner casing 6) of the cabinet (2), and the housing (4, 14) having a housing vent (opening 24 in baffle wall 14) for allowing air to flow from inside of the housing (4, 14) to outside of the housing (4, 14). Refer to GB ‘190, Figures 1-2; page 5, lines 18-29; and page 6, lines 1-20.

However, claim 1 of this application further discloses that the housing vent comprises a closure moveable between an open position in which air is permitted to flow through the housing

Art Unit: 3749

vent between the outside of the housing and the inside of the housing and a closed position in which the closure closes the housing vent so that little or no air is permitted to flow through the housing vent between the outside of the housing and the inside of the housing, wherein the housing vent and housing vent closure are positioned so that in both positions of the housing vent closure, air is able to flow between the interior of the housing and the interior of the cabinet, and wherein a controller is provided to control the position of the housing vent closure. While the GB '190 reference expressly discloses that the dimensions of the housing vent (opening 24 in baffle wall 14) can be varied in order to regulate the quantity of air that passes therethrough (see pg. 6, ln 14-16), the GB '190 reference does not explicitly disclose the use of a housing vent closure mechanism having the structure described above.

Irmer, although teaches a similar electronic equipment cabinet (distribution cabinet 1) having a housing part (3, 7) with a housing vent (functional opening 17) comprising a closure (functional cover 18') moveable between an open position (as illustrated by the dashed lines in Fig. 2) in which air is permitted to flow through the housing vent (17) between the outside of the housing (3, 7) and the inside of the housing (3, 7) and a closed position (as shown by the solid lines in Fig. 2) in which the closure (18') closes the housing vent (17) so that little or no air is permitted to flow through the housing vent (17) between the outside of the housing (3, 7) and the inside of the housing (3, 7), and an automatic controller (sensor controller, which regulates based upon a certain threshold temperature setting) to control the position of the housing vent closure (18') via an electrically operated drive (37), for the purpose of relieving hot air that has accumulated within the interior so as to create a more uniform temperature distribution within the electronic equipment cabinet (1). Refer to Irmer, Figures 1-2; page 3, paragraph [0032]; page

Art Unit: 3749

5, paragraph [0082]; and page 6, paragraphs [0094] and [0096]-[0097]. Therefore, when the GB '190 reference is viewed in light of Irmer, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the ventilated electronic equipment cabinet of the GB '190 reference by providing the housing vents (24) with pivotable closure members (18') and a sensor controller that controls the positions of the closure members (18') based upon a certain threshold temperature, as taught by Irmer, in order to relieve hot air that has accumulated within the interior of the electronic equipment cabinet so as to create a more uniform temperature distribution within the cabinet. See Irmer, page 6, paragraph [0097].

Moreover, in the above modified ventilated electronic equipment cabinet, the housing vents (24) and housing vent closure (18') are positioned such that in both the opened and closed positions of the housing vent closure (18'), air is able to flow between the interior of the housing (4, 14) and the interior (equipment airflow chamber circumscribed by inner casing 6) of the cabinet (2).

7. In regard to claim 2, the modified electronic equipment cabinet of the GB '190 reference further teaches a temperature sensor attached to the controller that provides an indication of the temperature inside the cabinet (sensor controller controls the positions of the closure members 18' based upon a certain threshold temperature). Refer to Irmer, Figure 2; page 3, paragraph [0032]; page 5, paragraph [0082]; and page 6, paragraph [0097]. Thus, the GB '190 reference in view of Irmer also renders the limitations set forth in this claim obvious.

8. Moreover, claim 3 of this application is obvious when the GB '190 reference is viewed in light of Irmer. As described above, the GB '190 reference, as modified by Irmer, teaches all the elements of base claim 1, the claim upon which this claim depends. Moreover, with respect to claim 3, the GB '190 reference further discloses that a fan (driven fans 16) is provided to

Art Unit: 3749

circulate air (as shown by the airflow arrows in Fig. 1) within the cabinet (electrical apparatus enclosure 2). Refer to GB '190, Figures 1-2 and page 5, lines 24-29. The GB '190 reference does not disclose expressly that the fan (16) is located inside the housing. Although, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to either locate the fan (16) inside the cabinet (2) as depicted in Figure 1 of the GB '190 reference, or alternatively, to locate the fan (16) inside the housing as recited by claim 3 of this application, because the applicant has not disclosed that providing the fan inside the housing provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the applicant's invention to perform equally well with the fan (16) located inside the cabinet (2) as depicted in Figure 1 of the GB '190 reference because this placement of the fan also enables air to be circulated within the housing and the cabinet so that the electronic components disposed within the cabinet may be effectively cooled.

9. Furthermore, claim 6 of this application is obvious when the GB '190 reference is viewed in light of Irmer. As described above, the GB '190 reference, as modified by Irmer, teaches all the elements of base claim 1, the claim upon which this claim depends. Moreover, with respect to claim 6, the modified electronic equipment cabinet of the GB '190 reference further teaches that the sensor controller of the cabinet comprises actuation means (electrically operated drive 37, which is, for example, a rack and pinion gear arrangement) that controls the positions of the housing vent closure members (18'). Refer to Irmer, Figure 2 and page 6, paragraph [0097]. The GB '190 reference does not disclose expressly that the actuation means of the housing vent closure, which is operatively coupled to the sensor controller, may also comprise a solenoid.

Art Unit: 3749

Although, at the time the invention was made, it would have been an obvious matter of design choice to a person of ordinary skill in the art to either use a rack and pinion gear arrangement for the actuation means of the housing vent closure as disclosed in Irmer, or alternatively, to use a solenoid for the actuation means of the housing vent closure as recited by claim 6 of this application, because the applicant has not disclosed that utilizing a solenoid for the actuation means of the housing vent closure provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected the applicant's invention to perform equally well with an housing vent closure actuation means in the form of a rack and pinion gear arrangement as disclosed in Irmer because this type of actuation means also enables the housing vent closure member to be automatically opened and closed in response to a control signal from the sensor controller.

10. In regard to claim 7, the modified electronic equipment cabinet of the GB '190 reference further teaches that the housing vent closure (functional cover 18') rotates (about a hinge) between the open (dashed lines – Fig. 2) and closed (solid lines – Fig. 2) positions. See Irmer, Figure 2 and page 6, paragraph [0097]. Consequently, the GB '190 reference in view Irmer also renders the limitations set forth in claim 7 obvious.

11. In regard to claim 8, the modified electronic equipment cabinet of the GB '190 reference further teaches that the housing vent (17) and closure (18') are provided in an external wall (outer baffle wall 14, the upper surface of which is exposed to the ambient air via exhaust openings 32) of the housing (4, 14). Refer to GB '190, Figure 2 and page 7, lines 4-6. Therefore, the GB '190 reference in view of Irmer also renders the limitations set forth in this claim obvious.

Art Unit: 3749

12. In regard to claim 9, the GB '190 reference further discloses an equipment cabinet (electrical apparatus enclosure 2) having a ceiling (top wall of inner casing 6) provided in combination with the air circulation and ventilation unit as described with respect to claim 1 above, with the housing (4, 14) fitting over at least one vent (outlet opening 20) in the ceiling (top wall of inner casing 6) of the cabinet (2), so that the interior of the housing (4, 14) is in communication with the interior of the cabinet (2). See GB '190, Figures 1-2; page 5, lines 18-23; and page 6, lines 1-20. Thus, the GB '190 reference in view of Irmer also renders the limitations set forth in claim 9 obvious.

13. In regard to claim 10, the GB '190 reference further discloses a roof (10) over the housing (4, 14) of the circulation and ventilation unit as described with respect to claim 1 above. Refer to GB '190, Figures 1-2 and page 5, lines 18-23. Consequently, the GB '190 reference in view of Irmer also renders the limitations set forth in claim 10 obvious.

14. In regard to claim 11, the GB '190 reference further discloses a fan (driven fans 16) inside the cabinet (electrical apparatus enclosure 2) to circulate air (as shown by the arrows in Fig. 1). See GB '190, Figures 1-2 and page 5, lines 24-29. Therefore, the GB '190 reference in view of Irmer also renders the limitations set forth in this claim obvious.

15. In regard to claim 12, the GB '190 reference further discloses that the housing vent (opening 24 in baffle wall 14) is vertically offset from the cabinet vent (outlet opening 20). Refer to GB '190, Figure 2 and page 6, lines 10-14. Thus, the GB '190 reference in view of Irmer also renders the limitations set forth in claim 12 obvious.

16. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application Publication No. GB 2 262 190 A ("GB '190") in view of Irmer (US 2003/0011988

Art Unit: 3749

A1) as applied to claim 1 above, and further in view of Iwatare (US 5,773,755). These three references, when considered together, teach all of the elements recited in **claim 4** of this application.

17. In particular, claim 4 of this application is obvious when the GB '190 reference is viewed in light of Irmer, and further viewed in light of Iwatare. As described above, the GB '190 reference, as modified by Irmer, teaches all the elements of base claim 3, the claim upon which this claim depends. However, claim 4 of this application further discloses that the fan is controlled by the controller. The GB '190 reference, as modified by Irmer, does not explicitly disclose this additional limitation. Iwatare, although, teaches a double-walled electronic equipment enclosure having a plurality of fans (5) disposed therein for cooling a heat producing device (1), wherein the plurality of fans (5) are controlled by a controller (8) that responds to a temperature sensor (7) that is provided within the enclosure for purpose of automatically controlling the operation of the fans so as to obviate the need for the laborious manual manipulation thereof. Refer to Iwatare, Figures 1 and 3; column 2, lines 60-67; column 3, lines 1-22. Therefore, when the GB '190 reference is viewed in light of Irmer, and further viewed in light of Iwatare, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the ventilated electronic equipment cabinet of the GB '190 reference in view of Irmer by additionally controlling the ventilating fans with the sensor controller of the cabinet, as taught by Iwatare, in order to automatically control the operation of the fans so as to obviate the need for the laborious manual manipulation thereof.

18. **Claim 5** is rejected under 35 U.S.C. 103(a) as being unpatentable over UK Patent Application Publication No. GB 2 262 190 A ("GB '190") in view of Irmer (US 2003/0011988

Art Unit: 3749

A1) as applied to claim 1 above, and further in view of Jones (US 6,127,663). These three references, when considered together, teach all of the elements recited in **claim 5** of this application.

19. In particular, claim 5 of this application is obvious when the GB '190 reference is viewed in light of Irmer, and further viewed in light of Jones. As described above, the GB '190 reference, as modified by Irmer, teaches all the elements of base claim 1, the claim upon which this claim depends. However, claim 5 of this application further discloses a heater inside the housing that is controlled by the controller. The GB '190 reference, as modified by Irmer, does not contain this additional limitation. Jones, although, teaches an outdoor electronic equipment cabinet (10) having a heater (heating element 62) disposed inside the cabinet housing (20), which is controlled by a controller (thermal controller 100), for the purpose of preheating the cooling air entering from the outside when it is too cold so that the air entering the interior of the cabinet is above the minimum cooling air temperature specified for the electronic equipment. Refer to Jones, Figure 2; column 3, lines 66-67; column 4, lines 1-12; and column 6, lines 32-38.

Therefore, when the GB '190 reference is viewed in light of Irmer, and further viewed in light of Jones, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the ventilated electronic equipment cabinet of the GB '190 reference in view of Irmer by adding a heater inside the housing that is controlled by the controller, as taught by Jones, in order to preheat the cooling air entering from the outside when it is too cold so that the air entering the interior of the housing is above the minimum cooling air temperature specified for the electronic equipment. See Jones, column 3, lines 66-67 and column 4, lines 1-3.

Art Unit: 3749

Response to Arguments

20. Applicant's arguments with respect to pending claims 1-12 have been considered but are moot in view of the new ground(s) of rejection.

In their present form, the claims fail to define over the teachings of the references relied upon in the rejections set forth above. However, it is noted that, if independent claim 1 is amended to require that recirculation airflow within the cabinet is *only* possible when the housing vent closure means is in its closed position, claims 1-12 of this application may become patentably distinguishable from the prior art of record.

Conclusion

21. See attached form PTO-892 for additional pertinent prior art, which was not directly relied upon in this action.

22. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick F. O'Reilly III whose telephone number is (571) 272-3424. The examiner can normally be reached on Monday through Friday, 8:30 am to 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven B. McAllister can be reached on (571) 272-6785. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3749

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick F. O'Reilly III/
Examiner, Art Unit 3749

/Steven B. McAllister/
Supervisory Patent Examiner, Art Unit 3749